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Two new species of the genus *Chilobrachys* (Araneae, Theraphosidae) from China

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Abstract

Two new species of the genus *Chilobrachys* Karsh, 1892 are described from China: *Chilobrachys dominus* Lin & Li, **sp. nov.** from Yunnan and *C. jinchengi* Lin & Li, **sp. nov.** from Tibet. Photos and a morphological description of the new species are given. The type specimens of the new species are deposited in the Institute of Zoology, Chinese Academy (IZCAS) in Beijing.

Keywords

Asia, diagnosis, taxonomy, type

Introduction

The family Theraphosidae Thorell, 1869 is one of the largest spider families in the world, including 1031 species in 153 genera (WSC 2021). This family is divided into 12 subfamilies (Foley et al. 2019), of which Selenocosmiinae Simon 1889 and Ornithoctoninae Pocock, 1895 are known from Asia.

Selenocosmiinae includes 125 species and subspecies in 12 genera. It can be distinguished from other subfamilies by the maxilla with an oval stridulatory organ on the prolateral surface, originating medially (not ventrally from the oral fringe), the maxilla with opposing modified setae in multiple rows on the retrolateral cheliceral surface,

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the posterior sternal sigillae distant from the sternal margins, the more than 60 labial cuspules, and the leg spines only found distally on the metatarsi; mature males lack a tibial apophysis on leg I (Nunn et al. 2016). In the genus *Chilobrachys* Karsh, 1892, the anterior eyes are nearly in a straight line, the stridulating organ consists of short spines on the chelicerae and a single or double row of paddle hairs overlapped by a fringe of hairs on the maxillae, and the palpal organ of the male ending in a long and slender embolus (Raven 1985; Zhu and Zhang 2008).

Four *Chilobrachys* species were hitherto known from China (Fig. 8, Li 2020; Li et al. 2021; Yao et al. 2021): *C. guangxiensis* (Yin & Tan, 2000) (Guangxi, Hainan), *C. hubei* Song & Zhao, 1988 (Hubei, Chongqing), *C. liboensis* Zhu & Zhang, 2008 (Guizhou, Guangxi) and *C. lubricus* Yu et al., 2021 (Yunnan). Here, we describe two new species: *Chilobrachys dominus* sp. nov. from Xishuangbanna, Yunnan and *Chilobrachys jinchengi* sp. nov. from Medog, Tibet.

Materials and methods

All specimens are preserved in 75% ethanol and deposited in the Institute of Zoology, Chinese Academy of Sciences in Beijing (**IZCAS**). Spermathecae were cleared in a trypsin enzyme solution to dissolve non-chitinous tissues. Specimens were examined under a LEICA M205C stereomicroscope. Photomicroscope images were taken with an Olympus C7070 zoom digital camera (7.1 megapixels). Photographs were stacked with Helicon Focus 6.7.1 and processed in Adobe Photoshop CC 2018.

The terminology used in the text and figures follows Bertani (2000). All measurements are in millimetres. Eye sizes were measured as the maximum diameter in either a dorsal or frontal view. Leg measurements are given as follows: total length (femur, patella, tibia, metatarsus, tarsus).

Abbreviations

A	apical keel;	**PI**	prolateral inferior keel;
ALE	anterior lateral eyes;	**PLE**	posterior lateral eyes;
AME	anterior median eyes;	**PME**	posterior median eyes;
MOA	median ocular area;	**PS**	prolateral superior keel.

Taxonomy

Family Theraphosidae Thorell, 1869
Subfamily Selenocosmiinae Simon, 1889

Genus *Chilobrachys* Karsh, 1892

Type species. *Chilobrachys nitelinus* Karsch, 1892.

Diagnosis. See Raven (1985) and Zhu and Zhang (2008).

Chilobrachys dominus **Lin & Li, sp. nov.**
http://zoobank.org/36EC608E-6671-407E-9E1D-10C5497BADC0
Figs 1A, 2A–H, 3A, B, 4A–C, 8

Type material. ***Holotype*** ♂ (IZCAS-Ar42676), **China:** ***Yunnan*****:** Jinghong, Mount Jinuo, Jinuo Road, 22.0556°N, 100.9853°E, elevation 1040 m, 16.XI.2021, Yi Ming leg.

Figure 1. *Chilobrachys* spp. nov., live males **A** *Chilobrachys dominus* sp. nov. **B** *C. jinchengi* sp. nov. Photos by Qianle Lu, Zhengzhong Huang.

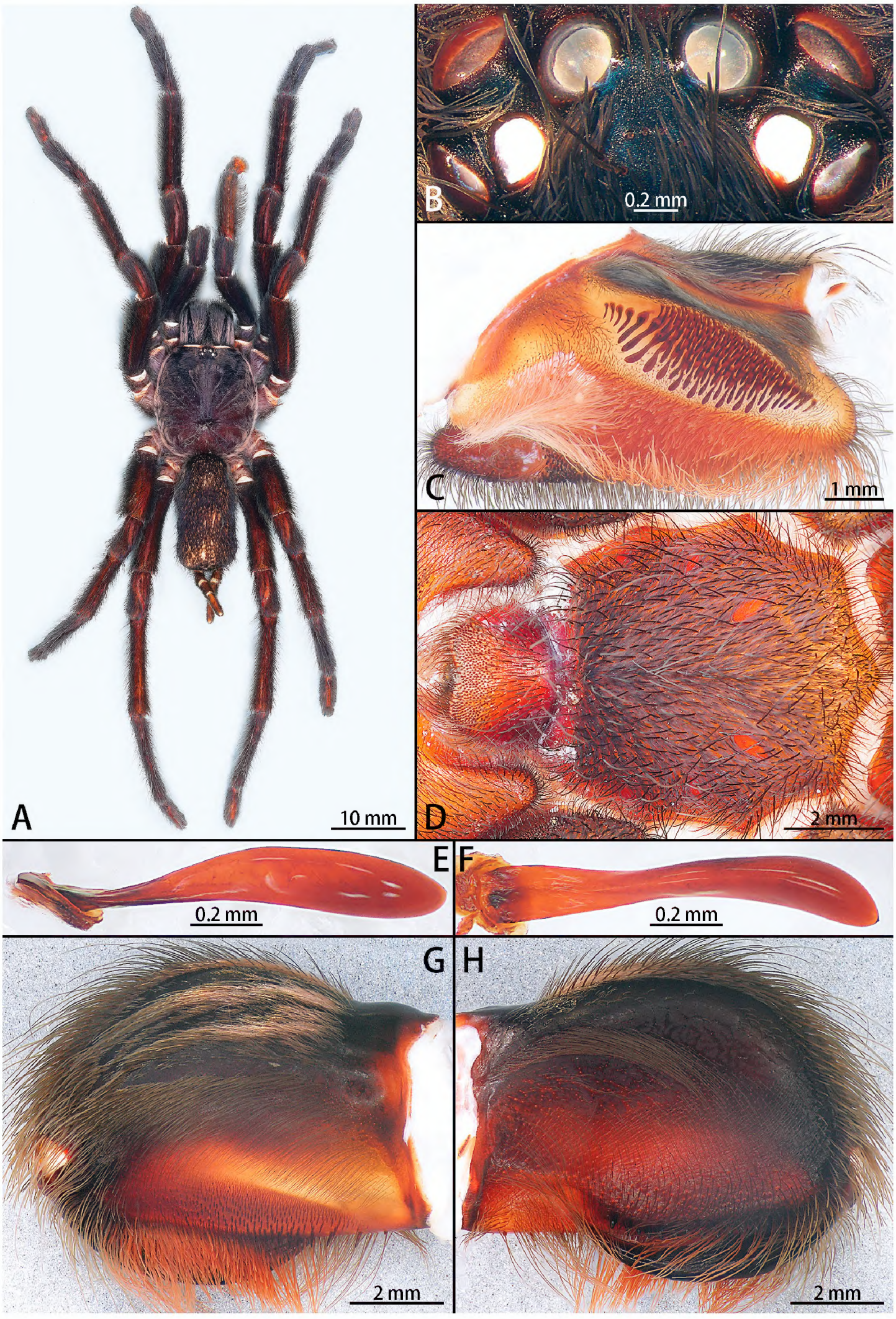

Figure 2. *Chilobrachys dominus* sp. nov., holotype male **A** male habitus, dorsal **B** ocular tubercle **C** right palp maxillae **D** sternum **E** stridulatory lyra, lateral view **F** same, ventral view **G** chelicerae, retrolateral view **H** same, prolateral view.

Figure 3. *Chilobrachys dominus* sp. nov., holotype, right palp bulb, rotated horizontally **A** retrolateral view **B** prolateral view.

Diagnosis. The male of *Chilobrachys dominus* sp. nov. is similar to that of *C. pococki* (Thorell, 1897) in having a long, strongly curved embolus, but can be distinguished by the embolus bent in at two thirds (vs. halfway in *C. pococki*).

Description. Male (holotype, IZCAS-Ar42676) (Figs 2B–H, 3, 4). Carapace 13.27 long, 11.89 wide, black, with long purple setae. Opisthosoma black, with long

Figure 4. *Chilobrachys dominus* sp. nov., holotype, left palp **A** prolateral view **B** ventral view **C** retrolateral view.

black setae. Eye group 2.08 long, 1.04 wide (Fig. 2F). MOA 0.81 long, anterior width 1.05, posterior width 1.53. Eye sizes and interdistances: ALE 0.52, AME 0.44, PLE 0.37, PME 0.37; ALE–AME 0.17, AME–AME 0.24, PLE–PME 0.02, PME–PME 0.90. Fovea slightly procurved. Chelicerae black, with row of 14 promarginal teeth. Labium wider than long, with 368 cuspules. Sternum yellow brown with 3 pairs of sigilla. Legs with long and short setae. Tarsi I–III with 2 claws, tarsus IV with 3 claws, denticle number: I 4, II 6, III 5, IV 4. Leg measurements: I 43.77 (12.70 + 5.62 + 11.52 + 7.39 + 6.54), II 38.16 (10.54 + 4.88 + 9.92 + 7.63 + 5.19), III 35.95 (9.59 + 4.08 + 7.87 + 8.61 + 5.80), IV 48.11 (12.72 + 4.89 + 11.10 + 12.75 + 6.65). Leg formula: 4123.

Male palpal bulb (Fig. 3A, B; male palp with bulb Fig. 4A–C). Maxillae with lyra setae ventrally. Bulb oval, embolus slender and long, strongly curved at 90°, with A.

Female. unknown.

Etymology. The species is named after the Latin word *dominus*, as this is one of the rarest spiders from China; noun (name) in apposition.

Distribution. Known only from the type locality.

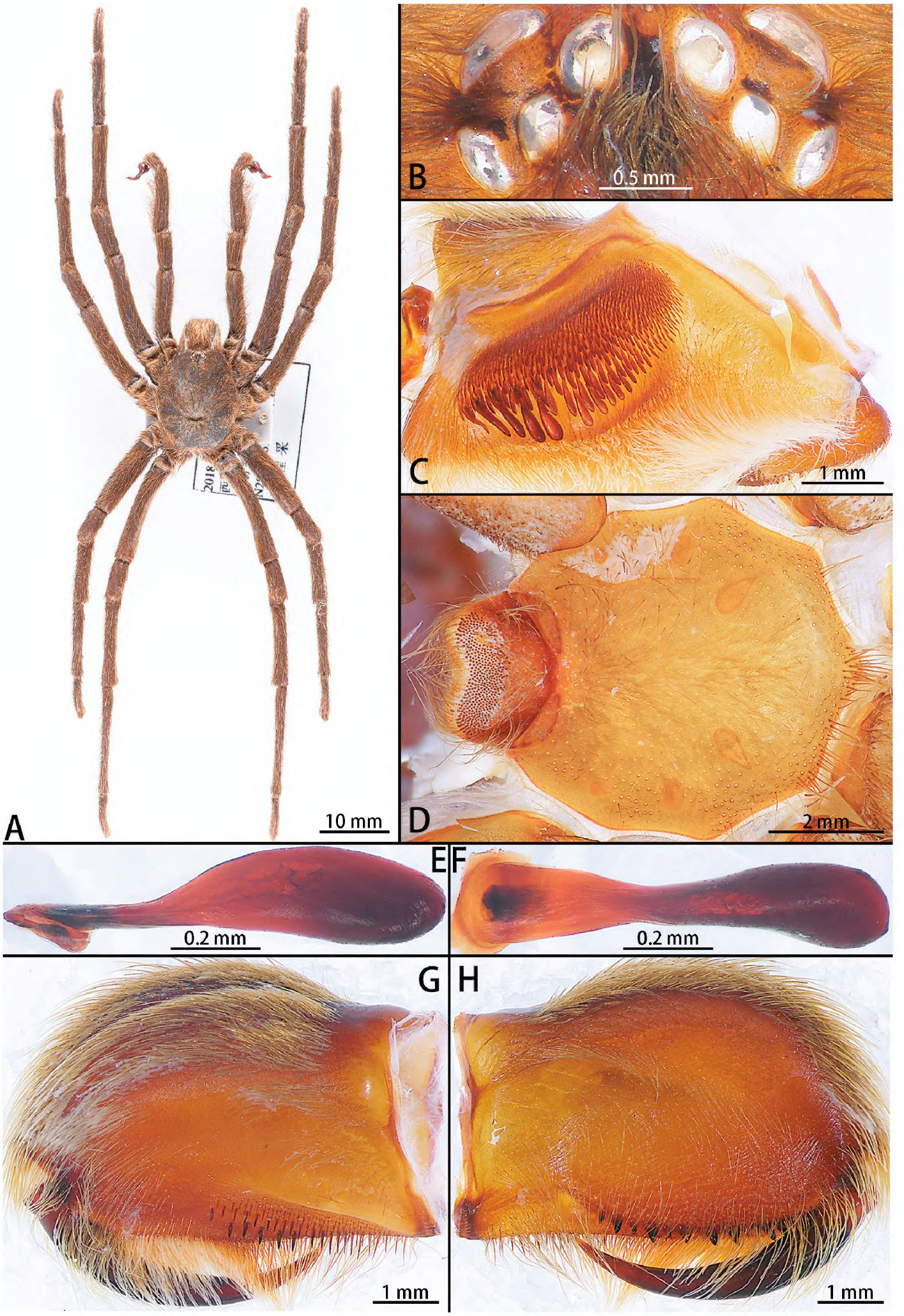

Figure 5. *Chilobrachys jinchengi* sp. nov., holotype (**B–H**) and paratype (**A**) males **A** male habitus, dorsal **B** ocular tubercle **C** right palp maxillae **D** sternum **E** stridulatory lyra, lateral view **F** same, ventral view **G** chelicerae, retrolateral view **H** same, prolateral view.

Chilobrachys jinchengi **Lin & Li, sp. nov.**
http://zoobank.org/CA76A9EC-61AF-4EBA-92F5-521EF797E229
Figs 1B, 5A–H, 6A, B, 7A–C, 8

Type material. ***Holotype*** ♂ (IZCAS-Ar42677), **China:** ***Tibet*****:** Nyingchi, Medog, from Baibung to Muge, 29.2386°N, 95.1831°E, elevation 1310 m, 21.VIII.2018, Jincheng Liu leg. ***Paratype*** 1♂ (IZCAS-Ar42678), same data as holotype.

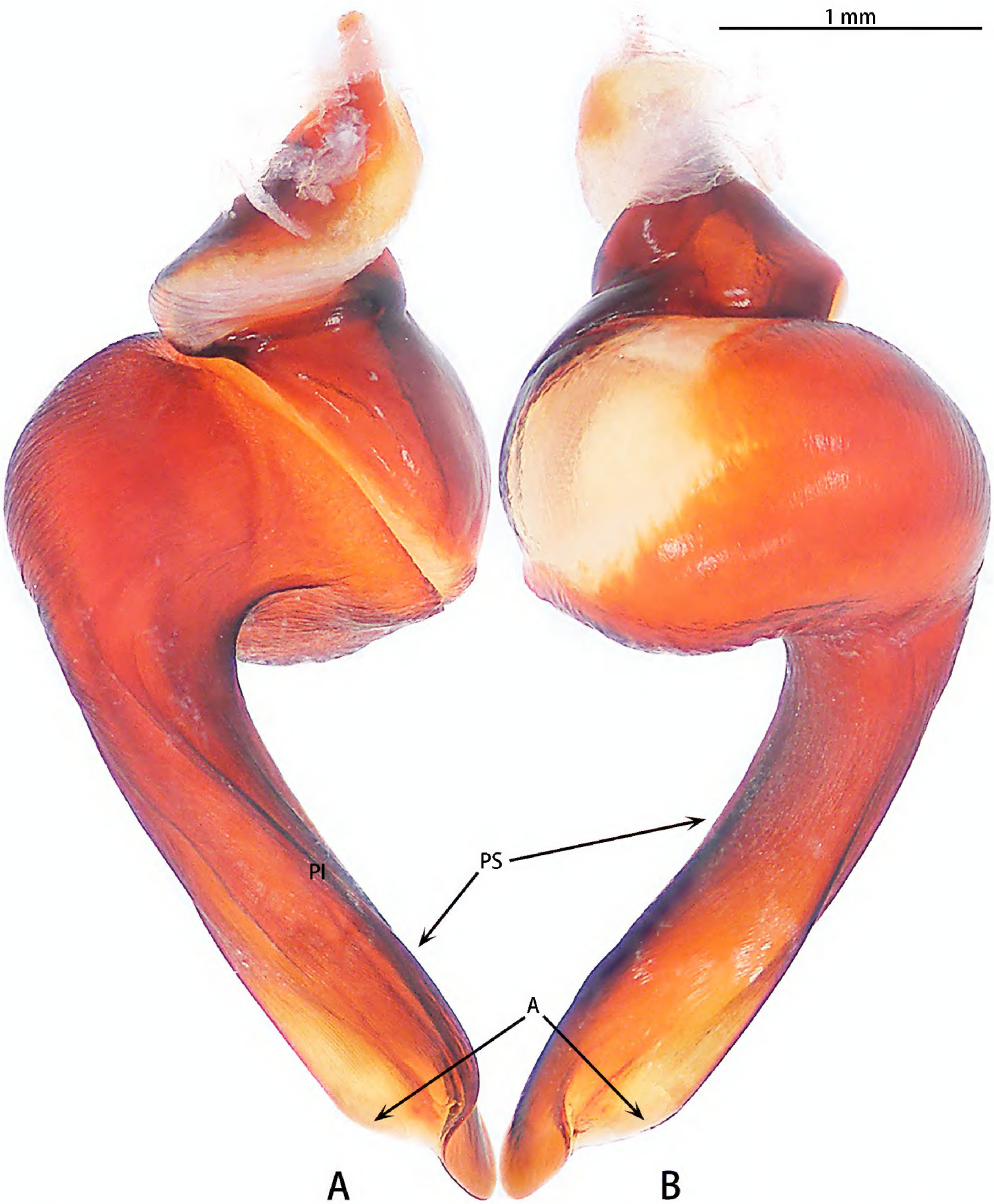

Figure 6. *Chilobrachys jinchengi* sp. nov., holotype, right palp bulb, rotated horizontally **A** retrolateral view **B** prolateral view.

Figure 7. *Chilobrachys jinchengi* sp. nov., holotype, left palp **A** prolateral view **B** ventral view **C** retrolateral view.

Diagnosis. The male of *Chilobrachys jinchengi* sp. nov. is similar to that *C. bicolor* (Pocock, 1895), but can be distinguished by the length ratio of the embolus to the bulb, which is almost 2:1 in *C. jinchengi* sp. nov. and is 1:1 in *C. bicolor*.

Description. Male (holotype, IZCAS-Ar42677) (Figs 5B–H, 6, 7). Carapace 13.12 long, 10.21 wide, brown with long setae. Opisthosoma absent. Eye group 2.32 long, 0.97 wide (Fig. 5F). MOA 0.77 long, anterior width 0.89, posterior width 1.38. Eye sizes and interdistances: ALE 0.51, AME 0.45, PLE 0.42, PME 0.38; ALE–AME 0.34, AME–AME 0.25, PLE–PME 0.12, PME–PME 0.87. Fovea slightly procurved.

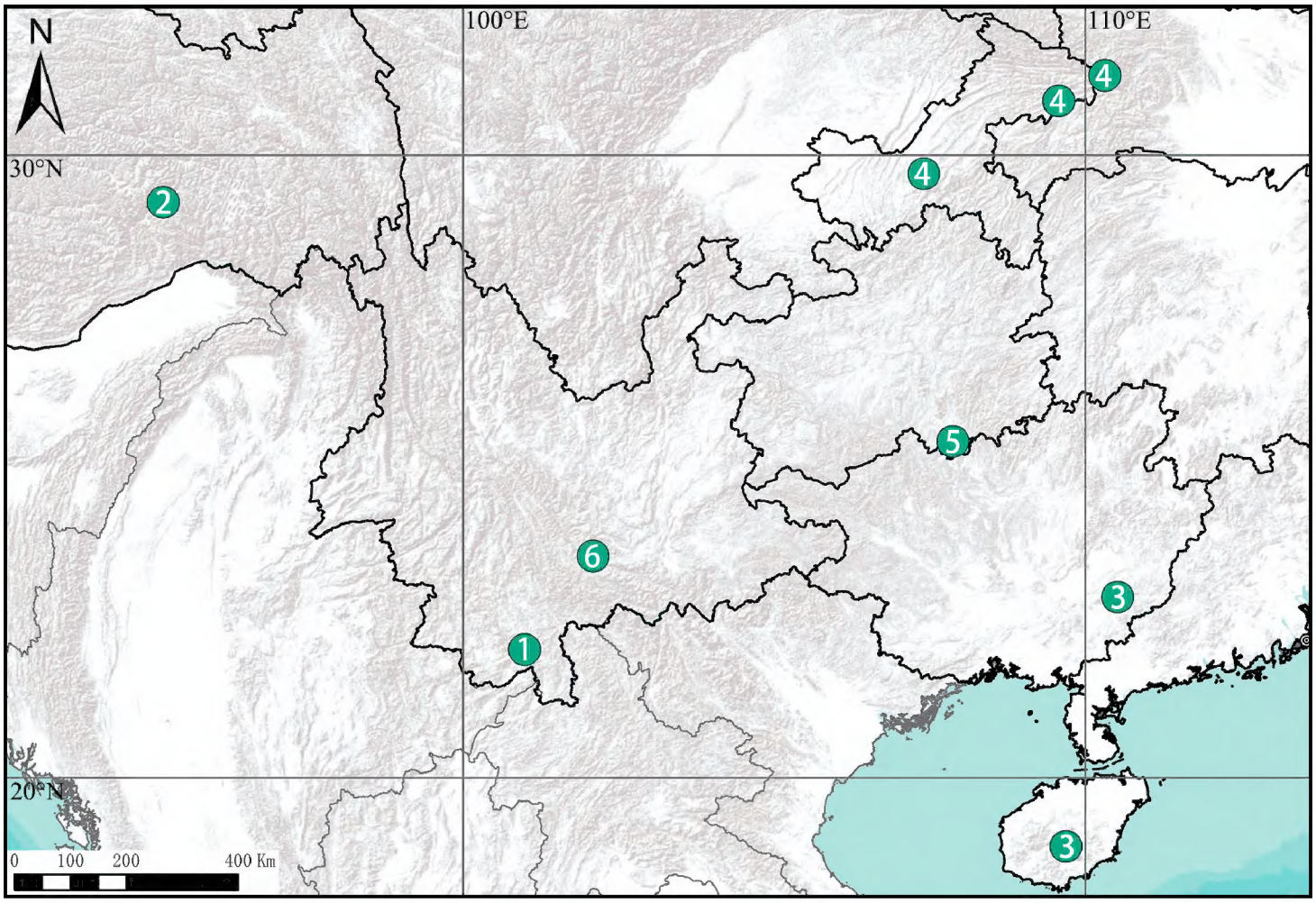

Figure 8. Distribution records of *Chilobrachys* species in China **1** *C. dominus* sp. nov. **2** *C. jinchengi* sp. nov. **3** *C. guangxiensis* (Yin & Tan, 2000) **4** *C. hubei* Song & Zhao, 1988 **5** *C. liboensis* Zhu & Zhang, 2008 **6** *C. lubricus* Yu et al., 2021.

Chelicerae dark brown, with row of 12 promarginal teeth. Labium wider than long, with 367 cuspules. Sternum yellow-brown, with 3 pairs of sigilla. Legs with long and short setae. Tarsi I–III with 2 claws, tarsus IV with 3 claws, denticle number: I 9, II 9, III 9, IV 12. Leg measurements: I 49.58 (14.23 + 7.12 + 11.21 + 9.89 + 7.13), II 45.77 (13.02 + 6.73 + 9.52 + 9.59 + 6.91), III 43.21 (11.51 + 5.48 + 8.24 + 11.51 + 6.47), IV 53.97 (14.32 + 5.87 + 11.22 + 15.96 + 6.60). Leg formula: 4123.

Male palpal bulb (Fig. 6A, B; male palp with bulb Fig. 7A–C). Maxillae with lyra setae ventrally. Bulb oval, embolus bow-shaped, strongly curved at 180°, with A, PI and PS. Distal edge of embolus relatively flat.

Female. unknown.

Etymology. The species is named after Mr. Jincheng Liu, who collected the type material; noun (name) in the genitive case.

Distribution. Known only from the type locality.

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